



*Analysis of
log sample from
paddy sample
Composite
Ash sample of
3/24/94*

September 26, 1994

Mr. Randy Ragland
U. S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19400

**SUBJECT: ALPHA AND GAMMA SPECTROMETRY RESULTS FOR THE SLUDGE
ASH SAMPLE FROM THE KISKI VALLEY WATER POLLUTION
CONTROL AUTHORITY'S LEECHBURG, PENNSYLVANIA SITE**

Dear Mr. Ragland:

The Environmental Survey and Site Assessment Program (ESSAP) of the Oak Ridge Institute for Science and Education (ORISE) has performed the requested alpha and gamma spectrometry analyses on the sludge ash sample from the Kiski Valley Water Pollution Control Authority in Leechburg, Pennsylvania. The results are presented in Table 1.

Please do not hesitate to contact me at (615) 576-0065 or Jack Beck at (615) 576-5031 should you have any questions.

Sincerely,

Wade C. Adams
Health Physicist/Project Leader
Environmental Survey and
Site Assessment Program

WCA:kew

Enclosures

- cc. R. Uleck, NRC/NMSS/TWPN/7F27
- D. Tikinsky, NRC/NMSS/TWPN/8A23
- K. Hardin, NRC/NMSS/TWPN/8D14
- G. Comfort, NRC/NMSS/TWPN/8D14

- J. Beck, ORISE/ESSAP
- E. Abelquist, ORISE/ESSAP
- PMDA, NRC/NMSS/TWPN/8A23
- File/271

**TABLE 1
RADIONUCLIDE CONCENTRATIONS
FOR THE SLUDGE ASII SAMPLE
FROM THE KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY
LEECHBURG, PENNSYLVANIA**

RADIONUCLIDE	RADIONUCLIDE CONCENTRATION (pCi/g)	
	GAMMA SPECTROMETRY ANALYSIS	ALPHA SPECTROMETRY ANALYSIS
Co-60	0.80 ± 0.26 ^a	N/A ^b
Cs-137	0.39 ± 0.02	N/A
Tl-208	0.51 ± 0.02	N/A
Pb-212	1.53 ± 0.02	N/A
Pb-214	1.84 ± 0.04	N/A
Bi-214	1.67 ± 0.04	N/A
Ra-226	1.84 ± 0.04	N/A
Ra-228	1.49 ± 0.08	N/A
Th-228	1.53 ± 0.02	1.40 ± 0.20
Th-230	6.33 ± 2.38	1.29 ± 0.19
Th-232	1.49 ± 0.08	0.89 ± 0.16
U-234	N/A	56.48 ± 1.32
U-235	3.13 ± 0.10	2.67 ± 0.33
U-238	15.86 ± 0.30	12.49 ± 0.62
Total U	87.85 ± 2.32 ^c	71.65 ± 1.50
Pu-238	N/A	<0.32
Pu-239/240	N/A	<0.22
Am-241	0.54 ± 0.03	N/A

^aUncertainties represent the 95% confidence level, based only on counting statistics.

^bNot applicable.

^cTotal uranium for gamma spectrometry was calculated by multiplying the U-235 concentration by a factor of 23 and then adding the U-238 concentration. The error in the total uranium concentration was calculated by propagating the errors in the U-238 and U-235 concentrations:

$$\sigma_{TotalU} = \sqrt{\sigma_{U-238}^2 + (23)^2 \sigma_{U-235}^2}$$

Background total uranium concentrations, which average 3.7 ± 1.4 pCi/g, have not been subtracted.



Handwritten notes:
J. Beck
sent to
Wade Adams

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LEECHBURG, PENNSYLVANIA

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